

WHAT IS CLAIMED IS:

1. An image processing device comprising:

a first element which produces partial straight lines from a straight line, wherein one of vertical or horizontal coordinate values of each of said partial straight lines has the same value;

a second element which produces, based on said partial line produced by said first element, a shading range having a first and second end, wherein said first end has a first color and said second end has a second color;

a third element which converts said first and second color of said shading range to a third and a fourth color, which express brightness as an independent parameter; and

a fourth element which produces, by using said third and fourth color, color of respective pixels between said first end and said second end of said shading range, wherein said color of respective pixels changes smoothly from said first end to said second end.

2. The image processing device as claimed in claim 1,

wherein said first element produces a first partial straight line in which each point of said first partial straight line has a first horizontal coordinate value and a second partial straight line in which each point of said second partial straight line has a second horizontal coordinate value;

wherein the difference between said first horizontal coordinate value and said second horizontal coordinate value is a pixel;

wherein the smallest vertical coordinate of said second partial straight line is one pixel larger than the largest vertical coordinate of said first partial straight line; and

wherein the smallest horizontal coordinate of said second partial straight line is one pixel larger than the largest horizontal coordinate of said first partial straight line; and

wherein said second element produces said shading range so that said shading range is adjacent to said first partial straight line in a vertical direction and is adjacent to said second partial straight line in a horizontal direction.

7. The image processing device as claimed in claim 6, wherein the length of said shading range is the same as that of said first partial straight line.

8. The image processing device as claimed in claim 6, further comprising a frame buffer which stores information about said first partial straight line, said second partial straight line and said shading range.

9. The image processing device as claimed in claim 6, wherein said shading range has a starting point, which has the smallest horizontal coordinate and which has a color of a pixel located at said starting point, and a ending point, which has the largest horizontal coordinate and has same color as the partial straight line associated with said shading range.

10. The image processing device as claimed in claim 1, wherein said third element converts said first and second color of said shading range to a third and a fourth color which is expressed in YUV color space.

1 17. The image processing method as claimed in claim 15,

2 wherein a first partial straight line in which each point of said first partial straight
3 line has a first vertical coordinate value and a second partial straight line in which each
4 point of said second partial straight line has a second vertical coordinate value;

5 wherein the difference between said first vertical coordinate value and said
6 second vertical coordinate value is a pixel;

7 wherein the smallest horizontal coordinate of said second partial straight line is
8 one pixel larger than the largest horizontal coordinate of said first partial straight line;

9 and

10 wherein said shading range is produced so that said shading range is adjacent
11 to said first partial straight line in the vertical direction and is adjacent to said second
12 partial straight line in the horizontal direction.

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